UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
FOX, JAMAL A

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ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/083,136	CHERIAN ET AL.
	Examiner	Art Unit	
	Jamal A. Fox	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>26 February 2002</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-20</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>26 February 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date <u>11/29/2004</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2.   Claims 1-5 and 13-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3.   Claim 1 recites the limitation "the storage controller" in line 3. There is insufficient antecedent basis for this limitation in the claim.

4.   Claim 2 recites the limitation "the available storage paths" in line 3. There is insufficient antecedent basis for this limitation in the claim.

5.   Claim 3 recites the limitation "the logical association" in line 3. There is insufficient antecedent basis for this limitation in the claim.

6.   Claim 5 recites the limitation "the default storage path" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitation "the available storage paths" in line 2. There is insufficient antecedent basis for this limitation in the claim.

7.   Claim 13 recites the limitation "the available storage path" in line 4. There is insufficient antecedent basis for this limitation in the claim.

8.   Claim 14 recites the limitation "the relationship" in line 2. There is insufficient

antecedent basis for this limitation in the claim.

9.   Likewise, claims 4 and 15-18 are rejected because they depend from rejected

base claims.

Claim Objections

10.   Claim 6 is objected to because of the following informalities: The claim is

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. Appropriate correction is required.

11.   Claim 6 recites the limitations "the first selected storage path" and "the alternate

path" in line 9 and line 10 respectively. There is insufficient antecedent basis for these

limitations in the claim.

12.   Claim 11 is objected to because of the following informalities: Claim 11 is a

duplicate of Claim 10. Appropriate correction is required.

Claim Rejections - 35 USC § 103

13.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

14.   Claims 1-12, 17 and 20 rejected under 35 U.S.C. 103(a) as being obvious over

Tawil et al. (U.S. Patent No. 6,625,747) in view of Selkirk et al. (U.S. Patent No.

6,925,528).

The applied reference has a common --*assignee*-- with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Referring to claim 1, Tawil et al. discloses a method for selecting an alternate storage path (see alternate path, col. 2 lines 7-9) between a server (Fig. 1 ref. sign 12) and a storage unit (Fig. 1 ref. signs 33 and 39) in a storage area network (see SAN, col. 2 line 28-31) following the failure (fails, col. 2 lines 7-9) of an existing path, comprising the steps of: identifying the storage controller (Fig. 1 ref. sign 24) of the existing storage path, but fails to explicitly teach of selecting an alternate storage path that does not include the storage controller of the existing storage path. However, Selkirk et al. discloses selecting an alternate storage path that does not include the storage controller

of the existing storage path (see col. 7 lines 48-53 and col. 8 lines 27-32). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included to the invention of Tawil et al., selecting an alternate storage path that does not include the storage controller of the existing storage path in order to reroute input data that is being sent to the high availability storage system as suggested by Tawil et al. (see col. 4 lines 32-34).

Referring to claim 2, Tawil et al. further discloses wherein the step of identifying (monitoring, col. 4 lines 22-25) the storage controller of the existing path comprises the step of identifying the available storage paths between the server (server, col. 4 lines 20-21) and the storage unit (see storage device 32, 34, 36, 38, 40 and 42, col. 4 lines 19-21).

Referring to claim 3, Tawil et al. further discloses the step of identifying the storage controller (controller, col. 6 lines 10-13) of the existing storage path comprises the step of identifying the logical (logical, col. 6 lines 15-16) association between ports and storage controller of a storage system.

Referring to claim 4, Tawil et al. further discloses the step of identifying the storage controller of the existing storage path comprises the steps of, identifying the available storage paths between a server and the storage unit (see col. 4 lines 19-25); and identifying the logical association between ports and storage controllers of a storage system (see col. 6 lines 10-16).

Referring to claim 5, Tawil et al. further discloses the existing storage path being

the default storage path between the server and the storage unit (see col. 4 lines 15-

21).

Referring to claim 6, Tawil et al. discloses a storage are network (see SAN, col. 2

line 28-31), comprising:

a server (Fig. 1 ref. sign 12) having a driver (Fig. 1 ref. sign 13);

a storage system (Fig. 1 ref. sign 22), wherein the storage system comprises,

multiple ports (Fig. 1 ref. signs 32, 34, 36, 38, 40 and 42);

multiple storage controllers (Fig. 1 ref. signs 24 and 26), wherein each of the

ports is associated with one of the storage controllers (see Fig. 1 ref. signs 32, 34, 36,

38, 40 and 42; and Fig. 1 ref. signs 24 and 26);

a storage unit (Fig. 1 ref. signs 33 and 39); and

wherein the driver is able to select a storage path between the server and the

storage unit and is able to select an alternate storage path in the event that the first

selected storage path becomes inoperable, but does not explicitly teach wherein the

alternate path does not include the storage controller of the first selected storage path.

However, Selkirk et al. discloses wherein the alternate path does not include the

storage controller of the first selected storage path (see col. 7 lines 48-53 and col. 8

lines 27-32). It would have been obvious to one having ordinary skill in the art at the

time the invention was made to have included to the invention of Tawil et al., wherein

the alternate path does not include the storage controller of the first selected storage

path in order to reroute input data that is being sent to the high availability storage system as suggested by Tawil et al. (see col. 4 lines 32-34).

Referring to claim 7, Tawil et al. discloses the storage area network of claim 6, but fails to explicitly teach of comprising a table accessible by the driver that includes an identification of the available storage paths between the server and the storage unit of the storage system. However, Selkirk et al. discloses a table accessible by the driver that includes an identification of the available storage paths between the server and the storage unit of the storage system (see col. 8 lines 1-3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included to the invention of Tawil et al. a table accessible by the driver that includes an identification of the available storage paths between the server and the storage unit of the storage system in order to identify the available signal paths that is being monitored as suggested by Tawil et al. (see col. 4 lines 22-26).

Referring to claim 8, Tawil et al. further discloses comprising storage units accessible by the multiple storage controllers (Fig. 1 ref. signs 24 and 26) of the storage system (Fig. 1 ref. sign 22).

Referring to claim 9, Tawil et al. discloses the storage area network of claim 6, further comprising, multiple storage units (Fig. 1 ref. signs 33 and 39) accessible by the multiple controllers (Fig. 1 ref. signs 24 and 26) of the storage system (Fig. 1 ref. sign 22); but fails to explicitly teach of

a data source accessible by the driver that includes an identification of the association of controllers and storage units of the storage system. However, Selkirk et

al. discloses a table, which is a data source, accessible by the driver that includes an identification of the association of controllers and storage units of the storage system (see col. 8 lines 1-3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included to the invention of Tawil et al. a data source accessible by the driver that includes an identification of the association of controllers and storage units of the storage system in order to identify the available signal paths that is being monitored as suggested by Tawil et al. (see col. 4 lines 22-26).

Referring to claim 10, Tawil et al. discloses the storage area network of claim 6, but fails to explicitly teach of a data source accessible by the driver that includes an identification of the association of controllers and storage units of the storage system. However, Selkirk et al. discloses a table, which is a data source, accessible by the driver that includes an identification of the association of controllers and storage units of the storage system (see col. 8 lines 1-3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included to the invention of Tawil et al. a data source accessible by the driver that includes an identification of the association of controllers and storage units of the storage system in order to identify the available signal paths that is being monitored as suggested by Tawil et al. (see col. 4 lines 22-26).

Referring to claim 11, Tawil et al. discloses the storage area network of claim 6, but fails to explicitly teach of a data source accessible by the driver that includes an identification of the association of controllers and storage units of the storage system.

However, Selkirk et al. discloses a table, which is a data source, accessible by the driver that includes an identification of the association of controllers and storage units of the storage system (see col. 8 lines 1-3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included to the invention of Tawil et al. a data source accessible by the driver that includes an identification of the association of controllers and storage units of the storage system in order to identify the available signal paths that is being monitored as suggested by Tawil et al. (see col. 4 lines 22-26).

Referring to claim 12, Tawil et al. further discloses a data source accessible by the driver that includes an identification of ports though which each storage unit of the storage system is accessible (see col. 6 lines 44-62).

Referring to claim 17, Tawil et al. discloses the method for providing a default and an alternate storage path of claim 13, wherein the step of identifying (see col. 4 lines 24-29) the available storage paths between each server the one or more storage units (Fig. 1 ref. signs 33 and 39) of the storage system (Fig. 1 ref. sign 22), but does not explicitly teach of the step of building a table of the available storage paths between the server and each storage unit of the storage system. However, Selkirk et al. discloses a table (see col. 8 lines 1-3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included to the invention of Tawil et al. the step of building a table of the available storage paths between the server and each storage unit of the storage system in order to identify the

available signal paths that is being monitored as suggested by Tawil et al. (see col. 4

lines 22-26).

Referring to claim 20, Tawil et al. discloses the method for switching from a

default storage path to an alternate storage path of claim 19, but fails to explicitly teach

of wherein the step of selecting an alternate path comprises the step of accessing an

information source to determine the association between storage units and storage

controller of the storage system. However, Selkirk et al. discloses a table, which is an

information source (see col. 8 lines 1-3). It would have been obvious to one having

ordinary skill in the art at the time the invention was made to have included to the

invention of Tawil et al. wherein the step of selecting an alternate path comprises the

step of accessing an information source to determine the association between storage

units and storage controller of the storage system in order to identify the available signal

paths that is being monitored as suggested by Tawil et al. (see col. 4 lines 22-26).

15.   Claims 15, 16, 18 and 19 rejected under 35 U.S.C. 103(a) as being obvious over

Tawil et al. (U.S. Patent No. 6,625,747). .

The applied reference has a common --*assignee*-- with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art

only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome

by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in

the reference was derived from the inventor of this application and is thus not an

invention "by another"; (2) a showing of a date of invention for the claimed subject

matter of the application which corresponds to subject matter disclosed but not claimed

in the reference, prior to the effective U.S. filing date of the reference under 37 CFR

1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and

reference are currently owned by the same party and that the inventor named in the

application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer

in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing

that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under

35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Referring to claim 15, Tawil et al. discloses the method for providing and an

alternate storage path of claim 13, but fails to explicitly teach of wherein the step of

selecting a first storage path between the server and the storage unit of the storage

system comprises the step of selecting the default storage path defined for the server

and the storage unit. However, a first storage path is disclosed in (col. 4 lines 25-30).

Therefore, it would have been obvious to one having ordinary skill in the art at the time

the invention was made to have included to the invention of Tawil et al. wherein the step

of selecting a first storage path between the server and the storage unit of the storage

system comprises the step of selecting the default storage path defined for the server

and the storage unit because there are only two paths and if you default back to from

the second path, you are obviously going to go the first path.

Referring to claim 16, Tawil et al. discloses the method for providing a default

and an alternate storage path of claim 14, wherein the step of identifying the available

storage paths comprises the steps of,

identifying (monitoring, col. 4 lines 22-25) the relationship between the storage

controllers (Fig. 1 ref. signs 24 and 26) and the ports of the storage system; but doe not

explicitly teach of selecting a first storage path between the server and the storage unit

of the storage system comprises the step of selecting the default storage path defined

for the server and the storage unit. However, a first storage path is disclosed in (col. 4

lines 25-30). Therefore, it would have been obvious to one having ordinary skill in the

art at the time the invention was made to have included to the invention of Tawil et al.

wherein the step of selecting a first storage path between the server and the storage

unit of the storage system comprises the step of selecting the default storage path

defined for the server and the storage unit because there are only two paths and if you

default back to from the second path, you are obviously going to go the first path.

Referring to claim 18, Tawil et al. further discloses the step of identifying the

relationship between the storage controllers and the ports of the storage system,

comprises the step of identifying for each storage controller (Fig. 2 ref. signs 64 and 68)

the ports (Fig. 2 ref. signs 66 and 70) to communicate to the storage controller.

Referring to claim 19, Tawil et al. discloses a method for switching from a storage

path to an alternate storage path between a server and a storage system having

multiple ports (Fig. 1 ref. signs 32, 34, 36, 38, 40 and 42), multiple storage controllers

(Fig. 1 ref. signs 24 and 26), and one or more storage units (Fig. 1 ref. signs 33 and 39),

comprising the steps of: recognizing a failure (fails, col. 2 lines 7-9) condition in the

default storage path; and selecting an alternate storage path (see alternate path, col. 2

lines 7-9) between the server (Fig. 1 ref. sign 12) and the storage unit (Fig. 1 ref. signs

33 and 39) of the storage system (Fig. 1 ref. sign 22), wherein the alternate storage

path including a storage controller that is different than the storage controller of the first

storage path, but fails to explicitly teach of switching from a default storage path.

However, a first storage path is disclosed in (col. 4 lines 25-30). Therefore, it would

have been obvious to one having ordinary skill in the art at the time the invention was

made to have included to the invention of Tawil et al. switching from a default storage

path because there are only two paths and if you default back to from the second path,

you are obviously going to go the first path.

Claim Rejections - 35 USC § 102

16.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act

of 1999 (AIPA) and the Intellectual Property and High Technology Technical

Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting

directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior

to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

17.   Claims 13 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by

Tawil et al. (U.S. Patent No. 6,625,747)

        The applied reference has a common --*assignee*-- with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art

under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome

either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in

the reference was derived from the inventor of this application and is thus not the

invention "by another," or by an appropriate showing under 37 CFR 1.131.

        Referring to claim 13, Tawil et al. discloses a method for providing a default and

an alternate storage path between a server (Fig. 1 ref. sign 12) and a storage system

(Fig. 1 ref. sign 22) having multiple ports (Fig. 1 ref. signs 32, 34, 36, 38, 40 and 42),

multiple storage controllers (Fig. 1 ref. signs 24 and 26), and one or more storage units

(Fig. 1 ref. signs 33 and 39), comprising the steps of: identifying the available storage

paths between each server the one or more storage units of the storage system (see

col. 4 lines 24-29); selecting a first storage path between the server and a storage unit

of the storage system (see col. 4 lines 29-31); and if the first storage path becomes

inoperable (not functioning properly, col. 4 lines 31-34), selecting an alternate path

(second signal path, col. 4 lines 33-34) between the server and the storage unit of the

storage system, the alternate storage path including a storage controller (Fig. 1 ref. sign

26) that is different than the storage controller (Fig. 1 ref. sign 30) of the first storage

path.

Referring to claim 14, Tawil et al. discloses the method for providing a default and an alternate storage path of claim 13, wherein the step of identifying the available storage paths comprises the step of identifying (monitoring, col. 4 lines 22-25) the relationship between the storage controllers (Fig. 1 ref. signs 24 and 26) and the ports (Fig. 1 ref. signs 32, 34, 36, 38, 40 and 42) of the storage system (Fig. 1 ref. sign 22).

Conclusion

18.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McGowen et al. (U.S. Patent Application Pub. No. 2003/0140191), McGowen et al. (U.S. Patent No. 6,779,064), Flynn Jr. et al. (U.S. Patent No. 6,954,881) and Lo et al. (U.S. Patent No. 6,877,044) each teach of LUNs, Drivers, Servers and Alternate Paths.

19.   **Any response to this action should be mailed to:**

> Commissioner for Patents
> P.O. Box 1450
> Alexandria, VA 22313-1450

or faxed to:

> (571) 273-8300, (for formal communications intended for entry)

20.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jamal A. Fox whose telephone number is (571) 272-3143. The examiner can normally be reached on Monday-Friday 8:30 AM - 7:00 PM.
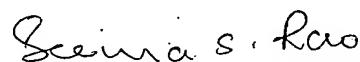
If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for

the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to 2600 Customer Service whose telephone number is

(571) 272-2600.

Jamal A. Fox

SEEMA S. RAO   3/20/06
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600